IN THE CLAIMS:

Please amend Claims 1, 3, 7 - 10, 12, 13, 15, 16, 18 - 20, and 23 - 25, and add new Claims 26 - 30 as follows.

1. (Currently Amended) An electron beam lithography system, comprising:

an electron gun, said electron gun comprising:

at least one laser; and

a photocathode substantially comprising cesium telluride and adapted to be activated to generate electrons by said at least one laser and to be regenerated by exposure of at least one surface of said photocathode to radiation generated from said at least one laser.

2. (Original) An electron beam lithography system in accordance with claim 1, wherein said photocathode comprises a cesium telluride film on a substrate.

3. (Currently Amended) An electron beam lithography system in accordance with claim 2, wherein said photocathode ~~including~~ includes a metallic film interposed between said cesium telluride layer and said substrate.

4. (Original) An electron beam lithography system in accordance with claim 2, including means for applying a current in a plane of said cesium telluride layer.

5. (Original) A method for electron beam lithography, comprising:

applying at least one laser in a first mode to a cesium telluride photocathode for generating electrons; and

applying said at least one laser to said cesium telluride photocathode in a second mode to regenerate said cesium telluride photocathode.

6. (Original) A method according to claim 5, wherein in said first mode, said laser is applied at a power density of approximately 10^4 Watts per square centimeter.

7. (Currently Amended) A method in accordance with claim 6, wherein in said second mode, said at least one laser is applied at a power density ~~in the range substantially comprising~~ ranging from about 10^4 - 10^6 Watts per square centimeter.

8. (Currently Amended) A method in accordance with claim 6, wherein in said second mode, said at least one laser is applied to at least one surface of said photocathode for a time sufficient to raise a temperature of said cesium telluride ~~photocathode~~ to a temperature ~~in the range substantially comprising 20 - 200 C~~ ranging from about 20 °C to about 200 °C above room temperature.

9. (Currently Amended) A method in accordance with claim ~~8~~ 26 , wherein a wavelength of said laser ~~comprising~~ comprises approximately 257 nanometers.

10. (Currently Amended) An electron gun, comprising:

at least one laser; and

a photocathode adapted to be activated to generate electrons by said at least one laser and to be regenerated by exposure of at least one surface of a photocathode to radiation generated from said at least one laser

11. (Original) An electron gun in accordance with claim 10, wherein said photocathode comprises a cesium telluride film on a substrate.

12. (Currently Amended) An electron gun in accordance with claim 11, said photocathode including a metallic film interposed between said cesium telluride layer and said substrate.

13. (Currently Amended) A method, comprising:

providing at least one laser; and

providing a photocathode adapted to be activated to generate electrons by said at least one laser and to be regenerated by exposure of at least one surface of said photocathode to radiation generated from said at least one laser.

14. (Original) An method in accordance with claim 13, wherein said photocathode comprises a cesium telluride film on a substrate.

15. (Currently Amended) An method in accordance with claim 14, wherein said photocathode ~~including~~ includes a metallic film interposed between said cesium telluride layer and said substrate.

16. (Currently Amended) An electron beam lithography system, comprising:

an electron column; and

an electron gun;

wherein said electron gun is adapted to apply at least one laser in a first mode to a cesium telluride photocathode for generating electrons; and

said electron gun is adapted to apply said at least one laser to at least one surface of said cesium telluride photocathode in a second mode to regenerate said cesium telluride photocathode.

17. (Original) An electron beam lithography system according to claim 16, wherein in said first mode, said at least one laser is applied at a power density of approximately 10^4 Watts per square centimeter.

18. (Currently Amended) An electron beam lithography system in accordance with claim 16, wherein in said second mode, said at least one laser is applied at least one surface of said photocathode at a power density ~~in the range substantially comprising~~ ranging from about $10^4 - 10^6$ Watts per square centimeter.

19. (Currently Amended) An electron beam lithography system in accordance with claim 16, wherein in said second mode, said at least one laser is applied to at least one surface of said photocathode for a time sufficient to raise a temperature of said cesium telluride photocathode ~~in the range substantially comprising 20 - 200 C~~ to a temperature ranging from about 20 °C to about 200 °C above room temperature.

20. (Currently Amended) An electron beam lithography system in accordance with claim ~~19~~ 27 , wherein a wavelength of said laser ~~comprising~~ comprises approximately 257 nanometers.

21. (Original) A controller for an electron beam lithography system, said controller adapted to control application of at least one laser to a photocathode in a first mode for generating electrons and in a second mode for regenerating said photocathode.

22. (Original) A controller in accordance with claim 21, said photocathode comprising a cesium telluride photocathode.

23. (Currently Amended) A controller according to claim 21, wherein said controller is adapted to control application of said at least one laser in said first mode ; such that said at least one laser is applied at a power density of approximately 10^4 Watts per square centimeter.

24. (Currently Amended) A controller in accordance with claim 21, wherein said controller is adapted to control application of said at least one laser in said second mode, such that said at least one laser is applied to at least one surface of said photocathode at a power density ~~in the range substantially comprising~~ ranging from about $10^4 - 10^6$ Watts per square centimeter.

25. (Currently Amended) A controller in accordance with claim 21, wherein said controller is adapted to control application of said at least one laser in said second mode, such that said at least one laser is applied to at least one surface of said photocathode for a time sufficient to raise a temperature of said cesium telluride ~~photocathode in the range substantially comprising 20 – 200 C~~ to a temperature ranging from about 20 ° to about 200 ° above room temperature.

26. (New) A method in accordance with claim 8, wherein said laser generates an ultraviolet wavelength which is applied to said surface of said photocathode.

27. (New) A method in accordance with claim 19, wherein said laser generates an ultraviolet wavelength which is applied to said surface of said photocathode.

28 (New) A method in accordance with claim 2, where a cesium bromide layer overlies said cesium telluride film.

29. (New) A method in accordance with claim 11, wherein a cesium bromide layer overlies said cesium telluride film.

30. (New) A method in accordance with claim 14, wherein a cesium bromide layer overlies said cesium telluride film.